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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,625	08/28/2001	Yoshikazu Kataoka	50099-177	4554

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EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/939,625

Applicant(s)

KATAOKA, YOSHIKAZU

Examiner

Hai C Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5:

- Claims 1 and 5 are indefinite for each using a trademark or trade name, namely "Grating Light ValveTM". If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. Ex parte Simpson , 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain

since the trademark or trade name cannot be used properly to identify any particular material or product. In fact, the value of a trademark would be lost to the extent that it became descriptive of a product, rather than used as an identification of a source or origin of a product. Thus, the use of a trademark or trade name in a claim to identify or describe a material or product would not only render a claim indefinite, but would also constitute an improper use of the trademark or trade name. See MPEP 2173.05(u).

Claims 2-4 and 6-7 are dependent from claims 1 and 5 above, and are therefore indefinite.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bloom et al. (U.S. 5,982,553) in view of Applicant's Acknowledged Prior Art (referred hereinafter as AAPA).

Bloom et al, discloses a laser imaging for recording an image on an image recording medium (printing medium 67, Fig. 8A), the laser imaging comprising a laser light source (32) emitting a first laser beam, a first optical system (mirror 80) converting

said first laser beam (laser beam incident on the mirror 80) to a second laser beam (beam being deflected by the mirror 80 toward the GLV array 10), a Grating Light ValveTM (GLV array 10), which receives said second laser beam and generates a modulated third beam (diffracted laser beams D_{+1} and D_{-1}), said Grating Light ValveTM comprising reflecting members (ribbons 12, Fig. 1), and a second optical system comprising a focusing lens (lens 55) for focusing said third beam on said image recording medium (67), wherein said first optical system comprises a bending element (mirror 80) bending said first laser beam to convert said first beam to said second laser beam, and the normal to the Grating Light ValveTM forms a nonzero angle θ_{xz} with said second laser beam (see Fig. 8A).

However, Bloom et al. fails to teach a window located a small distance away from the reflecting members of the GLV.

AAPA teaches a conventional Grating Light ValveTM being constructed with a plurality of reflectors or ribbons and a glass window disposed a small distance away from the ribbon surface (see Description of the Background Art section).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the glass window as taught by AAPA in the device of Bloom et al. since such glass window is always part of the reflective modulator Grating Light ValveTM as disclosed by AAPA.

With regard to claim 2, Bloom et al. also teaches the first optical system further comprising a lens (36) placed between said laser light source and said bending element.

With regard to claim 3, although Bloom et al. does not teach the angle θ_{xz} being at least 4° and not more than 20° , it is however well known in the art that the diffracted light beam as reflected from the GLV would be at a certain angle from the normal to the ribbon surface of the GLV dependent on which diffractive beam being used, e.g., zero-order or higher order diffractive beam. It would have been obvious to one having ordinary skill in the art at the time the invention was made to selectively select the proper diffractive beam of proper angle value as claimed for the exposure, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

With regard to claims 9-10, Bloom et al. teaches the optical system consisting of a prism (mirror prism 80) for deflecting the incident laser beam toward the GLV.

7. Claims 4-7, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bloom et al. in view of AAPA, and further in view of Ramanujan et al. (U.S. 6,084,626).

Bloom et al., as modified by AAPA, discloses all the basic limitations of the claimed invention except for a total internal reflection prism being used as the bending element (claim 4), the second optical system including a total internal reflection prism as a bending element (claims 5, 7), or a prism upon which the modulated laser beam is incident (claim 11).

Ramanujan et al. discloses a laser printer for recording an image on an image recording medium, the laser printer comprising a laser light source (laser diode array

11) emitting a laser beam, and an optical system in the form of a prism (deflector 30) for changing an optical-axis direction of said light beam for directing the light beam on the reflective surface of reflective-type grating modulator (40) and for redirecting the modulated light beam from the grating modulator toward the image recording medium (Fig. 1). Ramanujan et al. further teaches the deflector prism (30) being a total internal reflection prism (col. 16, lines 6-12).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate a deflecting prism and/or a total internal reflection prism on the optical axis of the modulated light beam as taught by Ramanujan et al. in the modified device of Bloom et al. The motivation for doing so would have been to allow the modulated beam to be directed to the surface to be imaged without interference and/or to replace the deflector with a known optics of a functional and mechanical equivalence.

With regard to claim 6, although Bloom et al. does not teach the angle θ_{xz} being at least 4° and not more than 20° , it is however well known in the art that the diffracted light beam as reflected from the GLV would be at a certain angle from the normal to the ribbon surface of the GLV dependent on which diffractive beam being used, e.g., zero-order or higher order diffractive beam. It would have been obvious to one having ordinary skill in the art at the time the invention was made to selectively select the proper diffractive beam of proper angle value as claimed for the exposure, since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. In re
Aller, 105 USPQ 233.

Contact information

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Hai C Pham whose telephone number is (703) 308-
1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone
numbers for the organization where this application or proceeding is assigned are (703)
308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (703) 308-
0956.



HAI PHAM
PRIMARY EXAMINER
November 12, 2003